

August, 1924. The greatest deficiency of precipitation occurred on the immediate coast of Texas, with only a "trace" of rain at Galveston and 0.02 inch at Corpus Christi. In general features of the pressure distribution over the Atlantic and Gulf States and of rainfall on the Texas coast, this August resembles August, 1902, when there was no rain at Galveston and only a "trace" at Corpus Christi; but August, 1902, on the whole, was drier in the interior of Texas than August, 1924.

No high winds occurred and no warnings were issued.—*R. A. Dyke.*

DENVER FORECAST DISTRICT

The distribution, direction, and velocity of movement, and intensity of areas of high and low atmospheric pressure during August were such as to fail to produce the usual precipitation from thunderstorms in the Denver district, except in western Colorado, where precipitation was normal. Temperatures were generally above normal over the district. The deficiency in precipitation in eastern Colorado was most pronounced, the month being one of the driest on record in that section. High-pressure areas, which in conjunction with Arizona low areas, are effective usually in producing summer thunderstorms in eastern Colorado, either were too feeble, too rapid in movement, or following a course too far northward to cause normal showers. As precipitation had been deficient throughout the summer, the dryness became acute during the latter half of the month.

On the evening of the 18th a low-pressure area, moving slowly over Colorado, indicated increasing westerly to northerly winds, very low humidity and high temperatures in the eastern portion of the State, and consequently forest officials were warned of the expected increase in the already high fire hazard. As low pressure continued over this region and developed somewhat in intensity, similar warnings were issued on the evenings of the 19th and 20th. During the period covered by these warnings the relative humidity at Denver was very low, the lowest observed being 7 per cent and the highest temperature was 91°, while at the elevated lookout station on Devil's Head, within the forested region, the wind movement was high and a maximum velocity of 40 miles an hour was recorded at one observation.

Owing to the demand for the information and the gravity of the situation, advice was published, beginning on the 21st, each morning during the remainder of the month relative to the fire hazard as affected by the meteorological conditions expected. Appreciation was expressed for the service rendered by the Weather Bureau, as it proved of value in coping with forest fires.

No other warnings were required.—*Lawrence C. Fisher.*

SAN FRANCISCO FORECAST DISTRICT

The outstanding feature of the weather in this district during August, 1924, was a small storm which appeared near Sitka on the 16th, moved southward along the coast on the 17th, and passed inland over British Columbia, near the international boundary, on the 18th. It gave light but general rain over the northern portion of this district and extended southward into the extreme northern counties of California. The rain greatly relieved the dangerous forest-fire condition in the areas in which it fell.

During the first decade the temperature was nearly normal throughout the district. In the first three days of the second decade there was a marked warming up in the northern portion of the district, which was followed by unsettled and cooler weather from the 16th to the

21st, over the entire district. A marked warm spell accompanied by low humidity prevailed over the interior of the entire district from the 23d to the 28th. On the afternoon of the 27th the record for high temperature in August was broken at Fresno, where the thermometer reached 110°.

The fire-weather hazard was high in the interior sections during the greater portion of the month and advices were broadcast twice daily covering this condition. No other warnings were required.—*G. W. Willson.*

627.41 (73)

RIVERS AND FLOODS

By H. C. FRANKENFIELD, Meteorologist

Aside from that in the Illinois River, no extensive floods occurred in the principal rivers of the country during August, 1924. Considerable damage to farms, rural communities, highways, and railroad property, and some loss of life occurred, however, from local floods which followed unusually heavy rainfall during the first three weeks of the month over eastern Iowa, southern Wisconsin, and northern Illinois. In the latter State the major portion of the damage—principally to harvested crops, livestock, and highway and railroad bridges—occurred in Henry, Knox, Mercer, and Stark Counties, following the rains of the 19th and 20th.

In east-central Iowa during the same period local damage of a similar character was considerable and two fatalities occurred.

In southern Wisconsin, following the very excessive rains of August 3-6, the highest flood of record and nine fatalities occurred in the Milwaukee River Valley, and losses and damage in this and other sections was estimated at upward of \$1,000,000. In the Milwaukee River the current was so swift that large steamers were compelled to anchor outside the harbor, some being delayed for three days. A moderate repetition of the conditions occurred with one fatality between Lake Winnebago and Lake Michigan following the rains between the 19th and 21st.

The more general flood in the Illinois River, occurring less than two weeks after the subsidence of the flood of late June-July, was brought about by the same general rains of August 19-21. This flood was chiefly remarkable for its time of occurrence, as high stages in the late summer are rare in the Illinois River. Stages in the upper river were generally somewhat higher than during the late June-July flood; but losses, which in the latter were considerable to crops and in finally preventing late planting, were not materially increased in this respect. Flood warnings were timely and well verified. The property losses were enormous when the limited territory involved is considered. Detailed statements could not be obtained, but newspaper estimates were as high as \$3,000,000, mainly along the smaller tributary streams, with railroads probably the greatest sufferers.

The same general rainfall conditions also caused a local flood in the Mississippi River district from the mouth of the Des Moines to the mouth of the Illinois River. Warnings were issued on August 23 and very little damage was done, about \$5,000 in crops, as the lowlands had been overflowed since early July.

On August 11 heavy local mountain rains caused a severe flood in the Galisteo River, a tributary of the Rio Grande, in northern New Mexico. The town of Lamy was inundated, and the losses in the town and adjacent country were probably as much as \$500,000.